UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
File Log No.: 8777

December 4, 2000

Ms. Ellen Ryker
Planning and Design Commission
City of Portland
1900 SW 4th Avenue
Portland, Oregon 97201

Re: Review of North Macadam District Planning Proposals

Dear Ms. Ryker:

The National Marine Fisheries Service (NMFS), Oregon State Habitat Branch, has reviewed the two-volume set of proposed revisions to development regulations applicable to the North Macadam District.[1] We greatly appreciate the City's goal of improving aquatic habitats in the North Macadam District and elsewhere for species listed under the Endangered Species Act (ESA), and the many actions already taken by the City to accomplish that goal. We hope our comments on these proposed revisions are helpful as you continue to work toward a balance between aquatic restoration and competing public needs and interests in the redevelopment of this important waterfront area.

BACKGROUND

The NMFS carries out programs for the conservation and protection of anadromous salmon and steelhead in Oregon. Part of our mission is to develop ESA conservation approaches for non-Federal entities, such as the City of Portland. We also provide scientific and policy leadership in aquatic habitat restoration, play an important support and advisory role for other Federal agencies, and help to administer marine fishery programs.

[1] City of Portland, Bureau of Planning, *North Macadam District Volume 1:Proposed Revisions to the Central City Plan, Willamette Greenway Plan and Title 33, Zoning Code*, 162 pp. (October 13, 2000) and *Volume 2: Proposed North Macadam District Design Guidelines*, 207 p. (October 13, 2000).

Six species of anadromous salmon and steelhead that occur in the Willamette River beside the North Macadam District are listed as threatened under the ESA.[2] These species may be directly affected by development or redevelopment authorized under these regulations. Six more listed species of salmon and steelhead migrate through the mainstem of the Columbia River below its confluence with the Willamette River and may be indirectly affected by development or redevelopment of this area.[3]

The specific habitat requirements of various species of salmonid fishes have been well described.[4] All species occurring in the Willamette Basin require cold, clean water for survival and growth, and clean stable, and permeable gravel substrates in running-water environments for reproduction. These components of the freshwater environment are highly vulnerable to alteration by most kinds of human activities and natural events. Large, mainstem riparian environments, such as the one occupied by the North Macadam District, provide essential functions such as barrier-free access for adults to spawning sites; regulation of seasonal flow and sediment dynamics; large wood source and deposition; supply clean, stable substrates; and moderation of thermal regimes by groundwater-surface water exchange. Shallow water portions of large mainstem rivers are also important for juvenile rearing and survival. There, young fish find low-velocity cover, a steady supply of small food particles, and refuge from larger predatory fishes, birds and mammals. Shallow areas that meet these rearing needs include quiet water areas, backwater areas, small spring-fed channels along stream margins, floodplain ponds and sloughs, and alcoves within structural complexes created by woody debris, bank structures and riparian vegetation or aquatic plants.

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[2] Lower Columbia River chinook salmon (*O. tshawytscha*), listed as threatened on March 24, 1999 (64 FR 14308); Upper Willamette River chinook salmon (*O. tshawytscha*), listed as threatened on March 24, 1999 (64 FR 14308); Columbia River chum (*O. keta*) was listed as threatened on March 25, 1999 (64 FR 14508); Lower Columbia River steelhead (*O. mykiss*), listed as threatened on March 19, 1998 (63 FR 13347); Upper Willamette River steelhead (*O. mykiss*), listed as threatened on March 25, 1999 (64 FR 7764) and Lower Columbia River/Southwest Washington coho salmon (*O. kisutch*), listed as a candidate on July 25, 1995 (60 FR 38011). The U.S. Fish and Wildlife Service has jurisdiction over a non-anadromous salmonid, Southwestern Washington/Columbia River coastal cutthroat trout (*O. clarki clarki*), that was proposed for listing the Endangered Species Act on July 25, 1995 (64 FR 16397) and may also occur in the action area that would be affected by development of the North Macadam District.

[3] Snake River fall-run chinook salmon (*O. tshawytscha*) and Snake River spring/summer chinook salmon (*O. tshawytscha*), both listed as threatened on April 22, 1992 (57 FR 14653) and corrected June 3, 1992 (57 FR 23458); Upper Columbia River spring-run chinook salmon (*O. tshawytscha*), listed as endangered on March 24, 1999; Snake River sockeye salmon (*O. nerka*), listed as endangered on November 20, 1991; (56 FR 58619); Upper Columbia River steelhead (*O. mykiss*), listed as endangered on August 18, 1997; Snake River Basin steelhead (*O. mykiss*), listed as threatened on August 18, 1997 (62 FR 43937); Middle Columbia River steelhead (*O. mykiss*), listed as threatened on March 25, 1999 (64 FR 14517).

[4] E.g., E.O. Salo and T.W. Cundy, *Streamside management: Forestry and fishery interactions,* Contribution No. 57, University of Washington, Seattle, 471 pp. (1987); C. Groot, C. and L. Margolis (eds.), *Pacific salmon life histories,* University of British Columbia, Vancouver 564 pp. (1991); W.R. Meehan, (ed.), *Influences of forest and rangeland management on salmonid fishes and their habitats,* American Fisheries Society, Bethesda, Maryland, 751 pp. (1991); J.J. Rhodes, *A comparison and evaluation of existing land management plans affecting spawning and rearing habitats of Snake River Basin salmon species listed under the Endangered Species Act,* Columbia Inter-Tribal Fish Commission, Portland, Oregon (1995).

Salmon and steelhead species are now listed in the Willamette Basin, in part, because many benefits created by the structural complexity of mainstem riparian habitats featuring large wood and broad, interconnected floodplains has been reduced or lost.[5] Related adverse effects occur whenever water temperatures rise and increase metabolic costs or reach lethal levels; suspended sediments impair the ability of salmon to see and capture their prey; and when accelerated deposition of sediments depletes populations of stream invertebrates that are most important for salmonid growth. Habitat conditions within the Willamette Basin have not significantly improved since these species were listed and, in many areas, habitat conditions are becoming worse. Reversing the trend of destruction and alteration of mainstem riparian environments by restoring natural habitat forming processes or otherwise recreating natural habitat structures is an important part of the effort to rebuild salmon and steelhead populations in the Willamette Basin.

Parts of the North Macadam District were included when critical habitats were designated for each threatened salmon and steelhead species in the Willamette Basin on February 16, 2000.[6] The essential features of a critical habitat may include, but are not limited to, spawning sites, food resources, water quality and quantity, and riparian vegetation. Critical habitats for listed salmon and steelhead are designated below longstanding, naturally impassable barriers in areas occupied by the listed species. Critical habitats often require special management considerations or other protection to maintain the physical and biological conditions necessary to conserve their essential features.

Moreover, the Pacific Fishery Management Council included the Willamette River and downstream areas to the Pacific Ocean in its designation of essential fish habitat (EFH) for Pacific salmon.[7] "EFH" means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Magnuson-Stevens Act requires Federal fishery councils, like the PFMC, to amend all fishery management plans to include EFH designations. The NMFS interprets EFH to include the full range of environmental variation necessary to support properly functioning habitat conditions throughout the managed species entire life cycle, provide for a sustainable fishery, and ensure the managed species'

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[5] NOAA Technical Memoranda, *Status Review of West Coast Steelhead from Washington, Oregon and California*, NMFS-NWFSC-27 (August 1996); *Status Review of Chum Salmon from Washington, Oregon and California*, NMFS-NWFSC-32 (December 1997); *Status Review of Chinook Salmon Steelhead from Washington, Oregon and California*, NMFS-NWFSC-35 (August 1996). See also, Independent Scientific Group, *Return to the River: Restoration of Salmonid Fishes in the Columbia River Ecosystem*, Northwest Power Planning Council Document 96-6 583 p. (September 1996); C. Maser and J.R. Sedell, *From the Forest to the Sea: the Ecologyof Wood in Streams, Rivers, Estuaries and Oceans*, S. Lucie Press, Delray Beach, Florida, 200 pp. (1994); Spence, B.C., *et al*., *An Ecosystem Approach to Salmonid Conservation*, TR-4501-96-6057, ManTech, Corvallis, OR 356 p. (December 1996); U.S. Geological Survey, *Water Quality in the Willamette Basin, Oregon, 1991-95*, U.S. Geological Survey Circular 1161, 34 p. (1998); and Oregon Progress Board, *Oregon State of the Environment Report* (September 2000).

[6] February 16, 2000 (65 FR 7764). Critical habitat was designated for Snake River fall-run chinook salmon and Snake River sockeye salmon on December 28, 1993 (58 FR 68543); for Snake River spring/summer chinook salmon on October 25, 1999 (64 FR 57399); and for Upper Columbia River spring-run chinook salmon, Upper Columbia River steelhead, Snake River Basin steelhead, and Middle Columbia River steelhead on February 16, 2000 (65 FR 7764).

[7] Pacific Fishery Management Council, Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon (1999).

contribution to a healthy ecosystem. Development or redevelopment of the North Macadam District could adversely affect EFH for any species considered here; the range of those affects is likely to be the same as for critical habitats.

A protective regulation, or "4(d) rule," prohibiting take of these species was published earlier this year.[8] The prohibition against take includes modification or degradation of a critical habitat that may result in harm to these species.[9] The rule recognizes that municipal development and redevelopment have significant potential to degrade a critical habitat and injure or kill salmon and steelhead in a variety of ways. However, the rule also contained "limits" that do not apply the take prohibition to specified types of activities that either contribute to salmon conservation or otherwise minimize their impacts on listed salmonids. One 4(d) limit is designed for use in municipal, residential, commercial and industrial areas and can be applied to urban development or redevelopment programs such as the North Macadam District.

Another way to comply with the take prohibition when land use activities might incidentally harm listed species is to obtain a permit from NMFS by developing a Habitat Conservation Plan.[10] Such plans are designed to offset any harmful effects the proposed activity might have on the species. This conservation planning process allows development to continue by authorizing incidental take of threatened or endangered species (not the underlying activities that result in take) while ensuring that the effects of the authorized take are adequately minimized and mitigated.

GENERAL COMMENTS

The conservation of salmon and steelhead and their habitats have not been afforded balanced consideration in past planning decisions by the City of Portland. Urban development has continued based on the assumption that improved management in other areas would mitigate for any impacts on natural species. However, the City's recent efforts to conserve listed species and their habitats represent important progress toward recovering these species, restoring the health of the Willamette Basin ecosystem, and benefitting other species presently in need of habitat improvements. To accomplish this goal, NMFS believes the regulations that will guide redevelopment of the North Macadam District should place a high priority on restoring important riparian functions and eliminating existing impediments to recovery of those functions.

The three most important opportunities to help recover listed salmon and steelhead in this area are restoration of shallow water habitats, water quality, and hydrologic functions. A combination of natural

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[8] Final rule governing take of 14 threatened salmon and steelhead Evolutionarily Significant Units (ESUs) July 10, 2000 (65 FR 42422).

[9] Definition of "Harm", November 8, 1999 (64 FR 60727).

[10] U.S. Fish and Wildlife Service and National Marine Fisheries Service, *Endangered Species: Habitat Conservation Planning Handbook*, various pagination (November 1996).

and aggressively engineered stream and riparian corridor restoration efforts will achieve these goals. Our overall recommendation is that this three-part strategy needs to be highlighted as a clear priority throughout the North Macadam District planning proposals.

We understand that it is necessary to read Volumes I and II together to understand how each development proposal within North Macadam will be reviewed by the Bureau of Planning. However, because compliance with the objectives of the Design Guidelines in Volume II can be achieved in many ways given the nuances of an individual project proposal, we will not comment on them at this time. Our specific recommendations on Volume I follow.

SPECIFIC COMMENTS AND RECOMMENDATIONS

Central City Plan

Opportunities to reduce the loss of listed fishes should be explicitly identified and given priority in each part of the Central City Plan.

Vision

Add language to the vision of the "focus on the Willamette River" or "the City that cares" that speaks directly to the City's commitment to "guide development in ways that will help restore listed salmon and steelhead." The vision should also include specific aspirations to provide shallow water habitats for listed species, meet or exceed water quality standards, and manage stormwater so the volume and velocity of flows do not harm the river or its banks.

Policy 21

Modify section E, F, or G, or add a new section to express the goal of restoring shallow water habitats. For example, "restore shallow water habitats to help recover native species of fish and wildlife now listed as threatened under the Endangered Species Act." This would make the language of Policy 21 consistent with commentary on page 28. Also, add two new sections to express the related goals of restoring water quality and ensuring that development will avoid stormwater impacts. For example, "manage development in ways that will ensure all runoff and groundwater discharges meet or exceed state water quality standards," and "ensure that development avoids adverse stormwater impacts and provides effective protection for streambanks and flows in the Willamette River."

Action Chart

1. Modify action NM20 to expand the width of the Willamette River Greenway to 200 feet wherever possible.

The size of the Willamette River Greenway in the North Macadam District is a key criterion of how effective it will be as a tool for the restoration of listed species. Still, size alone is not sufficient. Restoration of aquatic habitat complexity through natural recruitment of large wood may take centuries and span dozens of generations of fish. Restoration projects with an engineered component can shorten the time required to replace habitat functions. Nevertheless, the City's intention to use the Greenway to restore aquatic habitats must include a patient commitment to long-term action.

Precise standards to predict the performance of different sized riparian corridors or buffers do not exist. This is because corridor function at a particular location varies according to how long the corridor is left in place, the type of soil and vegetation present, depth of the water table, adjacent land use, the type and concentration of pollutants present, and many other factors. However, a substantial body of research and experience is accumulating to show that a 200-foot corridor is near the minimum desirable for restoration and maintenance of fish and wildlife habitats.[11] A corridor of this size is also likely to be effective to immobilize and remove nutrients and other pollutants, and reduce sediment and energy of runoff.

A 200-foot Greenway is consistent with use of a "site potential tree height" (SPTH) to delineate the riparian corridor in the North Macadam District. SPTH is an appropriate measure for this purpose because tree height away from a stream is a good indicator for many other important habitat functions, such as root strength, shade, litter fall, and wood recruitment. In the North Macadam District, second growth conifers may range in height from about 130 feet to more than 200 feet.

A 200-foot Greenway will also be better able to accommodate encroachment that may occur due to "width averaging," recreational trails, view corridors, access ways and the many other inevitable human disturbances that occur in an urban setting. More important, 200 feet will provide space to support restoration and adaptive management of riparian habitat complexity projects that are more commensurate with the scale of the Willamette River mainstem. Productive shallow water habitats in mainstem locations, whether created by natural processes or use of bioengineering techniques, need ample room to adapt to substantial variations in bank and floodplain features, water levels, and vegetation.

The Willamette River Greenway must be wide and nearly continuous to be credible and effective at providing a wide range of essential ecological functions. Moreover, new and existing vegetative buffers should also be established and connected at upland locations in the North Macadam District as

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[11] For example, A. Desbonnet, A., et al., *Vegetated buffers in the coastal zone: A summary review and bibliography*, Coastal Resources Center, Rhode Island Sea Grant, University of Rhode Island, 71 pp. (1994); *Forest ecosystem management: An ecological, economic, and social assessment*, Report of the Forest Ecosystem Management Assessment Team ("FEMAT")(July 1993); Metro Growth Management Services Department, *Policy analysis and scientific literature review for Title 3 of the Urban Growth Management Plan: Water quality and floodplain management conservation*, Portland, Oregon 57 pp. (July 1997); Metro Regional Services, *Streamside CPR: Development of measures to conserve, protect and restore riparian corridors in the Metro Region (discussion draft)*, Portland, Oregon, 113 pp + appendices (1999). Also see, footnote 5, and references therein.

necessary to prevent soil erosion, water pollution, and maximize the stormwater attenuation benefits inherent in natural vegetation.

2. Modify action NM22 or add a new action item to include an explicit reference to the goal of restoring shallow water habitats.

3. Modify action MN29 to call for development of adaptive stormwater systems that restore natural or near-natural flow conditions. Add a new element for development of incentives to retain and absorb stormwater on-site wherever technology and site conditions allow.

4. Modify action NM31 to include development of standards for permeable surfaces in building setbacks, parking and other uses compatible with stormwater retention.

5. Modify program MN42 to include consideration of water quality impacts when redeveloping interim surface parking.

6. Add new programs to identify the need for shallow water habitat improvements, and to create incentives for achievement of those improvements.

Urban Design Plan

Revise the Plan to show a 200-foot Greenway Setback. Add an element identifying areas or corridors for future shallow water habitat improvements.

Willamette Greenway Plan

Our comments on changes to the Willamette Greenway Plan have been folded in with comments on the Amendments to the Zoning Code and the Design Guidelines, below.

Amendments to the Zoning Code and Zoning Code Map

33.511.200 (C) Special Regulations for Structured Parking. See, comment on eco-roof bonus option, below.

33.511.210(D)(2) Eco-roof Bonus Option. We support use of "eco-roofs" as an innovative technology to retain stormwater on-site. We recommend finding ways to extend eco-roof incentives to structured parking, and monitoring to ensure that claimed environmental results are achieved and modifications are made where design standards prove to be inappropriate.

33.511.220 Building Setbacks. Like eco-roofs, building setbacks can be used to increase permeable surfaces and reduce stormwater impacts. We encourage the City to find ways to increase use of permeable surfaces in these areas.

33.511.255(D)(2) Central City Master Plan Greenway Approval Criteria (Greenway average width). See, comments on Greenway width, above.

33.511.300 Parking. We encourage the City to find was to increase the use of permeable surfaces in all off-street and surface parking areas.

33.511.400 Purpose. Add an affirmative statement that the Greenway's purpose includes restoration of habitat conditions necessary for the recovery of listed salmon and steelhead.

33.511.425 Greenway Setback. Add a statement that the purpose of the Greenway Setback includes providing a location for the restoration of shallow water habitats necessary for the recovery of listed salmon and steelhead. See, discussion of Greenway width, above.

33.511.430 Greenway Landscaping. Besides width, plant species selection and vegetative management will be the most important factors contributing to the effectiveness of the Greenway for achieving riparian functions. We recommend that these standards be reevaluated against ecological restoration guidelines to ensure a better balance between functional and aesthetic values.

Map 511-9 Greenway Setback. Revise the map to show a 200-foot Greenway Setback.

Thank you for this opportunity to comment on the City's plans for the last major undeveloped subdistrict of the Central City, and its best opportunity to establish a continuous, functional riparian corridor. We see this proposal for the North Macadam Project not just as a document, but as the beginning of an ongoing process of learning and improvement that will help us become better stewards of "Salmon in the City."

If you have questions about this letter, please contact Marc Liverman at 503.231.2336 or Ben Meyer of my staff at 503.230.5425.

Sincerely,

Michael Tehan
Chief, Oregon State Branch
Habitat Conservation Division